PNL17

VALIDATION OF THE CHILDHOOD HEALTH ASSESSMENT QUESTIONNAIRE (CHAQ) IN HUNTER SYNDROME

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OBJECTIVES: Mucopolysaccharidosis II (MPS II; Hunter syndrome) is a rare lysosomal storage disorder that leads to severe functional declines in childhood and adolescence. Because no disease-specific instruments currently exist for MPS II, this study sought to confirm the previously established psychometric properties of the CHAQ in this disease population. **METHODS:** All twelve families participating in a Phase I/II enzyme replacement therapy trial for MPS II agreed to participate in the IRB-approved CHAQ confirmatory validation study. Assessments were completed during regular twice-monthly study visits. Only patients 12 years and older completed the instrument although all parents were asked to complete the questionnaire as a proxy responder. Face validity, internal reliability, domain intercorrelation coefficients, parent-child correlations, and test-retest reliability were assessed on the overall CHAQ disability index. **RESULTS:** Nine patients (mean age 18.0 ± 4.3 years) and one parent per child completed the CHAQ; three additional patients (mean age 9.7 ± 1.5 years) had parent-reported assessments only due to age limitations. The instrument showed good internal reliability (Cronbach's alpha = 0.86 [parents] and 0.83 [patients]) and good reproducibility in a test-retest over a 3-week period (Spearman correlation coefficient = 0.81, p = 0.0014 [parent]; 0.94, p = 0.0002 [patient]). Parent-child correlation was moderately weak at 0.38 (p = 0.317), a divergence commonly seen in child/adolescent outcome measurements. Intercorrelation coefficients of each domain with the overall disability index were in the moderate range (mean r_s = 0.6 for parents, r_s = 0.5 for patient). Although face validity was acceptable, the CHAQ still did not completely address certain functional challenges specific to MPS II. **CONCLUSION:** The psychometric properties of the CHAQ appear acceptable in measuring general disability and functional status in MPS II. Further assessment of its sensitivity and discriminant validity are needed as part of ongoing clinical trials. Development of a disease-specific instrument appears warranted given the unique functional challenges of patients with MPS II.

PNL18

DEVELOPMENT AND PILOT TESTING OF THE HUNTER SYNDROME-FUNCTIONAL OUTCOMES FOR CLINICAL UNDERSTANDING SCALE (HS-FOCUS): AN INSTRUMENT TO ASSESS FUNCTIONAL HEALTH IN HUNTER SYNDROME

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OBJECTIVES: To develop and pilot-test a new instrument to assess physical functioning in children with Mucopolysaccharidosis II (MPS II; Hunter syndrome [HS]), a rare genetic, lysosomal storage disease. **METHODS:** The survey item pool was generated by: 1) thorough literature review to identify relevant domains and questions; 2) consultation with expert clinicians knowledgeable about MPS II; 3) identification of indicators specific to MPS II not covered by existing instruments, and 4) input from families affected by MPS II. Following IRB approval, the item pool was tested in MPS II patients and their families attending the 2003 Annual MPS Society Family Conference. Data were obtained via structured feedback forms completed during face-to-face interviews. Inter-item correlations within each domain were tested for internal reliability. Results were used to modify items to create a finalized instrument, the HS-FOCUS. **RESULTS:** Two versions of the HS-FOCUS were created. The parent-reported form included 59 items and the patient-reported form included 58 items, in the domains of standing/walking, grip/reach, sleeping, schooling, activities, eating/appetite, satisfaction and botheredness with functional status, and treatment satisfaction. Sixteen parents and 2 adult MPS II patients completed the questionnaire and provided feedback on relevance of questions, understandability, and feasibility of use. Domains of grip/reach, schooling, activities, satisfaction, and botheredness with physical function achieved a Cronbach's alpha of at least 0.84. Based on these analyses for construct validity along with written and interview feedback, 16 items were revised for clarity and specificity, 6 were removed, and 9 were added. **CONCLUSIONS:** Preliminary results suggest that the HS-FOCUS may be useful for assessing functional health in MPS II. Inasmuch as existing instruments do not adequately assess functional outcomes in patients with MPS II, this preliminary version of the HS-FOCUS may offer clinicians and researchers an opportunity to do so. Future studies should validate the instrument.

PNL19

VALIDATION OF THE HUNTER SYNDROME-FUNCTIONAL OUTCOMES FOR CLINICAL UNDERSTANDING SCALE (HS-FOCUS)

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OBJECTIVES: To validate a new instrument, the Hunter Syndrome-Functional Outcomes for Clinical Understanding Scale (HS-FOCUS), a new instrument for assessing functional status in children and adolescents with Mucopolysaccharidosis II (MPS II; Hunter syndrome [HS]), one of a group of rare genetic, lysosomal storage diseases. **METHODS:** Following IRB approval, participants were recruited from the 2003 Annual MPS Family Conference and an ongoing MPS II Phase I/II clinical trial. Eligible participants were individuals with MPS II at least 12 years old or a parent of a child of any age with MPS II. The instrument was administered twice over a 3-week period. Face validity, internal reliability, domain intercorrelation, parent-child correlations, and test-retest reliability were assessed for each of six domains (standing/walking, grip/reach, sleeping, schooling/work, activities, and breathing) and for the overall disability score. **RESULTS:** Eleven patients with MPS II and 27 parent caregivers of patients with MPS II completed the HS-FOCUS. Face validity was confirmed through interviews with expert clinicians, patients with MPS II, and their families. The instrument showed very good overall internal reliability (Cronbach's alpha = 0.93 [parents] and 0.83 [patients]). The HS-FOCUS showed good reproducibility (r_s = 0.85, p < 0.0001 [parents] and 0.71, p = 0.031 [patients)] for overall function in test-retest analyses, although sleeping and breathing domains had weaker correlations. Intercorrelation coefficients for each domain with the overall functional disability score were strong (range r_s = 0.69 to 0.89). Weak correlations were reported between the nine parent-child pairs, which is commonly accepted as a challenge in survey research of children and adolescents. **CONCLUSIONS:** Findings of this validation study suggest that the HS-FOCUS may effectively capture disability and functional status in individuals with MPS II. Additional assessment of sen-